

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. After amending the claims as set forth above, claims 37-70 are now pending in this application.

Applicant wishes to thank the Examiner for the careful consideration given to the claims.

Rejection of claims 37-70 based on Riepe and Grochowski

Claims 37-70 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,665,950 ("Riepe") and U.S. patent 4,752,213 ("Grochowski"). This rejection is traversed for at least the following reasons.

Claim 37 (as amended) recites, among other things, an air tube comprising opposing first and second wall regions connected by longitudinal wall regions such that an inside space is enclosed by the first, second, and longitudinal wall regions; and a gas tube comprising an aperture for providing gas inwards to the air tube. The air tube comprises a first aperture at the first wall region for receiving the back tube of the gas burner such that the back tube extends through the first aperture from outside the first wall region into the inside space. The aperture of the gas tube is provided with a first part of a detachable connection device, for receiving a second part of the detachable connection device provided on the back tube for allowing gas from the gas tube to enter the back tube. No combination of Riepe and Grochowski teaches or suggest this combination of features.

For example, Riepe and Grochowski does not teach or suggest an air tube comprising a first aperture at the first wall region for receiving the back tube of the gas burner such that the back tube extends through the first aperture from outside the first wall region into the inside space. Riepe discloses gas-heated infrared radiator with a manifold with gas 14 (which the PTO considers to be the gas tube of claim 37), a hollow transverse beam 16 with air 15 (which the PTO considers to be the air tube of claim 37), and a mixing tube 9 (which the PTO considers to be the back tube of claim 37). The transverse beam 16 does not have a first aperture at the first wall region for receiving the back tube of the gas burner such that the back tube extends through the first aperture from outside the first wall region into the inside space. Thus, Riepe not disclose all the features of claim 37.



Even if the enclosure 20 of Grochowski is used in place of the transverse beam 16 of Riepe, the resulting combination would not have an air tube comprising a first aperture at the first wall region for receiving the back tube of the gas burner such that the back tube extends through the first aperture from outside the first wall region into the inside space because the mixing chamber 3 cannot extend through the through aperture of the flange 71. Thus, claim 37 is allowable over Riepe and Grochowski.

In addition, the combination of Riepe and Grochowski is improper. The PTO asserts that it would be obvious to use the enclosure 20 of Grochowski for the transverse beam 16 of Riepe. However, the enclosure 20 of Grochowski is not a transverse beam. Riepe teaches:

The radiators are fixed on a holder frame of the drying unit. In the embodiments according to FIGS. 1 and 3 the hollow transverse beam 16, on which the mixing tube 9 is mounted with the housing 1, serves to hold the radiator. The hollow transverse beam 16 is thus part of the frame of the drying unit.

It is significant for the invention that the radiator housing 1 be secured with the frame (in FIGS. 1 and with the hollow transverse beam 16) by releasable fastening means that is manually releasable from the radiating front face. (Column 3, lines 27-45 of Riepe.)

If the enclosure 20 of Grochowski is used instead of the transverse beam 16 of Riepe, the enclosure 20 of Grochowski could not longer serve to hold the radiator or be part of the frame of the drying unit. Thus, the element serving to hold the radiator and being part of the frame of the drying unit would be unsuitable for its intended purpose. If a modification makes an element unsuitable of its intended purpose, the modification is not-obvious. (See MPEP 2143.01.¹) Thus, the combination of Riepe and Grochowski is improper and not obvious.

Also, a person of ordinary skill in the art would not combine the teachings of Riepe and Grochowski because Riepe teaches a fully premixed burner system, whereas Grochowski does not. Furthermore, Grochowski teaches a burner with a pressurized/closed combustion chamber, wherein the burner is also cooled by the secondary air circuit. This secondary air circuit is needed for terminating combustion. (Column 5, lines 34-36 of Grochowski.) This

¹ "If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)."

secondary air circuit has further advantages: (a) it provides a pressure equilibrium to the system (column 6, lines 52-62 of Grochowski) by having the air tube in fluid communication with the combustion chamber (column 3, lines 31-34 of Grochowski); (b) it provides continual ventilation of the electrodes thereby avoiding condensation on the exterior surface of the electrodes (column 6, lines 62-66 of Grochowski) and c) the circulation of secondary air improves the flexibility of the burner vis-à-vis limited pressures and powers (column 7, lines 9-11 of Grochowski). However, the burner of Grochowski is difficult to assemble and it may be difficult to work in modules, such as the drying units of Riepe.

If a person of ordinary skill in the art would consider to combine Riepe with Grochowski, the mixing tube 9 would indeed be cooled by an air flow (albeit the secondary air circuit, not with primary air as is the case with claim 37), but also the burner would be cooled by the secondary air circuit. Furthermore, the burning gases would be provided with this secondary air (from the openings 22 in the flange 71 of Grochowski), which would cool these gases and would thus also lower the temperature of the radiant element, which would thereby also be less radiant, i.e., the radiative output of the system would be reduced. Given these complications, one with ordinary skill in the art would not combine the teachings of Riepe and Grochowski. Thus, claim 37 is allowable.

Claim 46 recites, among other things, a radiant panel; and a back tube for providing air and gas to the radiant panel. The back tube has an orifice for allowing air from the air tube to enter inside the back tube. The air tube comprises opposing first and second wall regions connected by longitudinal wall regions such that an inside space is enclosed by the first, second, and longitudinal wall regions, and a first aperture at the first wall region for receiving the back tube such that the back tube extends through the first aperture from outside the first wall region into the inside space. The back tube is provided with a second part of a detachable connection device for receiving a first part of the detachable connection device present at the aperture of the gas tube.

As previously mentioned, Riepe and Grochowski do not teach or suggest an air tube comprising a first aperture at the first wall region for receiving the back tube such that the back tube extends through the first aperture from outside the first wall region into the inside space and the combination of Riepe and Grochowski is improper because the element serving to hold the radiator and being part of the frame of the drying unit would be unsuitable for its

intended purpose; the burner of Grochowski is difficult to assemble and it may be difficult to work in modules; and the radiative output of the system is reduced. Thus, claim 46 is allowable.

Claim 57 (as amended) recites, among other things, at least one gas burner comprising a radiant panel, and a back tube for receiving air and gas to be combusted and for providing air and gas to the radiant panel; and an appliance for providing air and gas to the gas burner, wherein the appliance comprises an air tube and a gas tube. The gas tube comprise an aperture for providing gas inwards to the air tube. The air tube comprises opposing first and second wall regions connected by longitudinal wall regions such that an inside space is enclosed by the first, second, and longitudinal wall regions, and a first aperture at the first wall region for receiving the back tube such that the back tube extends through the first aperture from outside the first wall region into the inside space. The back tube has an orifice for allowing air from the air tube to enter inside the back tube. The aperture of the gas tube is provided with a first part of a detachable connection device, for receiving a second part of the detachable connection device provided on the back tube for allowing gas from the gas tube to enter the back tube.

As previously mentioned, Riepe and Grochowski do not teach or suggest an air tube comprising a first aperture at the first wall region for receiving the back tube of the gas burner such that the back tube extends through the first aperture from outside the first wall region into the inside space and the combination of Riepe and Grochowski is improper because the element serving to hold the radiator and being part of the frame of the drying unit would be unsuitable for its intended purpose; the burner of Grochowski is difficult to assemble and it may be difficult to work in modules; and the radiative output of the system is reduced. Thus, claim 46 is allowable.

Claims 38-45, 47-56, and 58-70 depend from and contain all the features of claims 37, 46, or 57 and are allowable for the reasons provided above, without regard to the further patentable features contained therein.

For at least these reasons, favorable reconsideration of the rejection is respectfully requested.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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